

TECHNOLOGY IMPROVEMENT PROGRAM
COLUMBIA FALLS REDUCTION PLANT

WHAT IS "TIP"

A COORDINATED SET OF ENGINEERING PROJECTS DESIGNED TO MAXIMIZE
THE EFFICIENCY OF EXISTING TECHNOLOGY.

"TIP" BENEFITS

REDUCED ENERGY CONSUMPTION

IMPROVED LABOR PRODUCTIVITY

REDUCED MAINTENANCE EXPENSE (LONGER POT LIFE)

REDUCED IN-PROCESS INVENTORIES

PROVEN TECHNOLOGIES

CAPITAL = \$30 MILLION OVER 5 YEARS

EXCEPTIONAL RATE OF RETURN

COLUMBIA FALLS REDUCTION PLANT

350 MILLION POUNDS OF PRIMARY ALUMINUM PRODUCTION

HALF OF COMPANY TOTAL

SHEET INGOT SUPPLIER TO MILL PRODUCTS

27-YEAR-OLD FACILITY

UPDATED WITH SUMITOMO TECHNOLOGY IN 1976

LOWEST ENERGY COSTS IN PACIFIC NORTHWEST

"SODERBERG" TECHNOLOGY USES LESS GAS HEAT

MOST EFFICIENT "SODERBERG" PLANT